

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

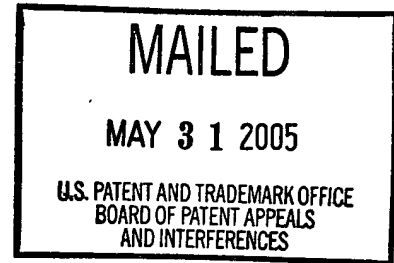
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MENG-YU WEI

Appeal No. 2005-0560
Application No. 09/873,127

ON BRIEF



Before SMITH, JERRY, GROSS, and BARRY, Administrative Patent Judges.

SMITH, JERRY, Administrative Patent Judge.

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 2, 4, 5, 8, 11, 12, 16-18, 20 and 26-28, which constitute all the claims remaining in the application. In response to the filing of the appeal brief, the examiner has withdrawn the rejection of claims 20 and 26-28 [answer, page 6]. Therefore, this appeal is now limited to the rejection of claims 1, 2, 4, 5, 8, 11, 12 and 16-18.

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The disclosed invention pertains to a method and apparatus for switching beams of light directly between selected ones of N input optical fibers and M output optical fibers.

Representative claim 1 is reproduced as follows:

1. A non-blocking mechanical fiberoptic matrix switch, comprising:

N input optical fibers;

M output optical fibers;

a first plurality of stages each supporting an end portion of a corresponding one of the N optical fibers;

a second plurality of stages each supporting an end portion of a corresponding one of the M optical fibers;

means for translating the stages along a plurality of overlapping paths to align a facet of a selected one of the N input optical fibers with a facet of a selected one of the M output optical fibers; and

a plurality of collimating lenses, each for transmitting a beam of light between aligned input and output fibers.

The examiner relies on the following references:

Mock	5,664,034	Sep. 02, 1997
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Kobayashi et al. (Kobayashi)	JP 6-258584	Sep. 16, 1994
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Claims 1, 2, 4, 5, 8, 11, 12 and 16-18 stand rejected under 35 U.S.C. § 103(a). As evidence of obviousness the examiner offers Kobayashi in view of Mock.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in the claims on appeal. Accordingly, we affirm.

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In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444

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(Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered and are deemed to be waived [see 37 CFR § 41.37(c)(1)(vii)(2004)].

The examiner's rejection essentially finds that Kobayashi teaches the claimed invention except that Kobayashi does not teach a collimating lens between input and output optical fibers. The examiner asserts that collimating lenses used in this manner are well known in the fiber switching art as taught by Mock. The examiner finds that it would have been obvious to the artisan to modify the Kobayashi device to have collimating lenses between the input and output fibers as taught by Mock [answer, pages 3-4].

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Appellants have argued all the claims on appeal as a single group. Appellants argue that the Kobayashi switch depends on the mating of the input and output fiber ends and has no need for the collimating lenses of Mock. Appellants argue that there is no motivation within the applied prior art to make the modification proposed by the examiner [brief, pages 5-6].

The examiner responds that Mock teaches that even in a fiber optic coupling arrangement that depends on a close proximity of input and output fibers, collimating lenses may advantageously be used to ensure minimal coupling loss between the fibers. He reiterates his position that it would have been obvious to the artisan to provide this advantage to the Kobayashi device [answer, pages 4-6].

Appellants respond that the switching arrangement disclosed by Mock is very different from the claimed arrangement. Appellants also respond that the examiner's proposed modification defeats the fundamental design of Kobayashi which depends upon pulley mechanisms to insert and withdraw the ferrules relative to the sleeves. Appellants assert that the examiner's proposed modification would degrade the optical coupling obtained in Kobayashi [reply brief, pages 1-2].

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We will sustain the examiner's rejection of the claims on appeal. Appellants' argument that the switching arrangement of Mock is different from the claimed switching arrangement is not persuasive because Kobayashi is relied on to teach the claimed switching arrangement. Although Kobayashi teaches that the ferrules at the end of the optical fibers are inserted into sleeves, this type of alignment does not guarantee that the ends of the fibers will mate exactly. Regardless of whether or not the ends of the fibers in Kobayashi are intended to contact each other, we agree with the examiner that the advantages of collimating lenses placed at the ends of the fibers would be obtained in the Kobayashi device as well. Appellants' argument that collimating lenses in Kobayashi would degrade the performance of the device is not convincing. We can see no reason why collimating lenses would degrade properly aligned fibers, but we can see at least one reason why collimating lenses would enhance the operation of Kobayashi if the fibers in the sleeve are still not properly aligned. Mock clearly teaches what the advantages of collimating lenses are. We also find that the artisan would have been motivated to add collimating lenses in Kobayashi because

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that would permit the alignment sleeves to be eliminated. In other words, the artisan would have recognized that collimating lenses can be used as taught by Mock so that optical fibers do not have to be physically connected.

In summary, we have sustained the examiner's rejection of each of the claims on appeal. Therefore, the decision of the examiner rejecting claims 1, 2, 4, 5, 8, 11, 12 and 16-18 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

Jerry Smith
JERRY SMITH

JERRY SMITH
Administrative Patent Judge

Anita Pellman Grosse

ANITA PELLMAN GROSS
Administrative Patent Judge

BOARD OF PATENT

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JS/dpv

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